



23970726

33/3549A CS 33/3549A

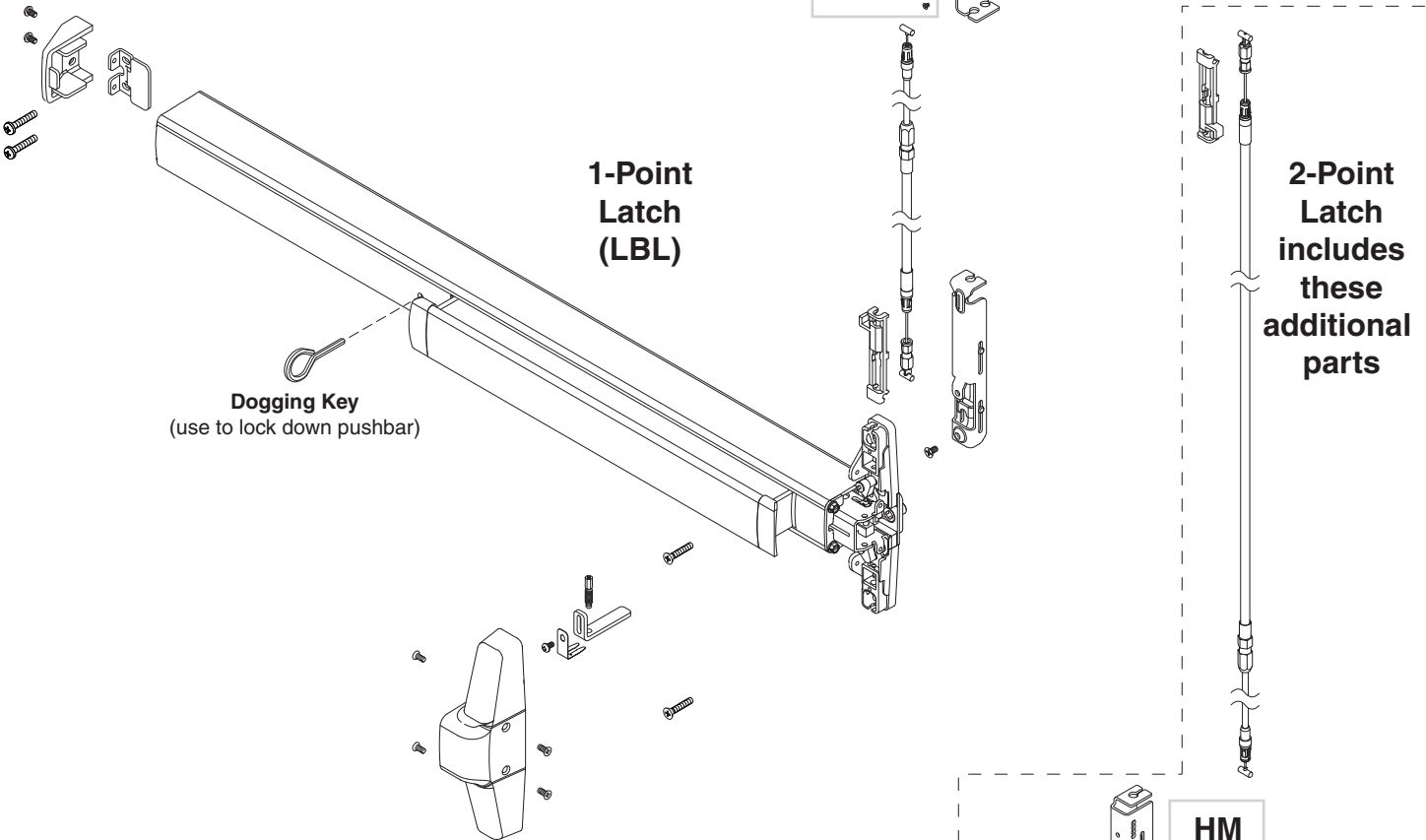
VON DUPRIN®

Installation Instructions

This instruction covers new installation of the 33/3549A concealed vertical device for aluminum and hollow metal doors.

Also covered is the CS 33/3549A retrofit cabling system for converting 33/3547A Series to 33/3549A Series (compatible with models 33/3547A, 33/3547A-F, 33/3547A-LBR, and 33/3547A-F-LBR).

See page 14 for an explanation of Warnings and Cautions used in this booklet.



- AL** = for Aluminum Door applications
- HM** = for Hollow Metal Door applications
- RF** = for Hollow Metal Door Retrofit applications

Customer Service

1-877-671-7011

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23970726 Rev. 07/16-I

CABLE IDENTIFICATION

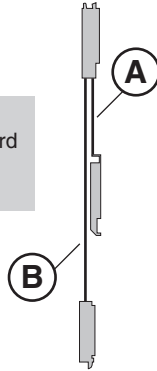
1 Identify Cables and Locations.

CABLE IDENTIFICATION		
* Door Opening Height	HOLLOW METAL AND ALUMINUM DOORS	
	A Top Cable (Red)	B Bottom Cable (White)
6' 0" - 6' 10"	47250398	47250403
6' 10" - 8' 0"	47250175	47250178
8' 0" - 9' 2"	47250176	47250179
9' 2" - 10' 4"	47250177	47250180
10' 4" - 11' 6"	47250399	47250404
11' 6" - 12' 8"	47250400	47250405
12' 8" - 13' 10"	47250401	47250406
13' 10" - 15' 0"	47250402	47250407

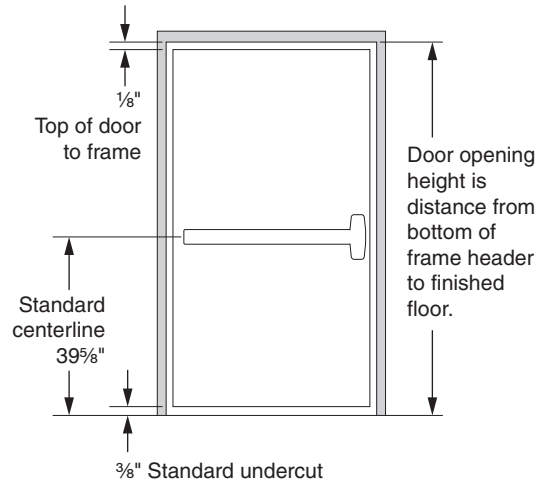
* Based on standard centerline of 39 5/8" from finished floor

For easy identification, each cable is labeled with part number and location.

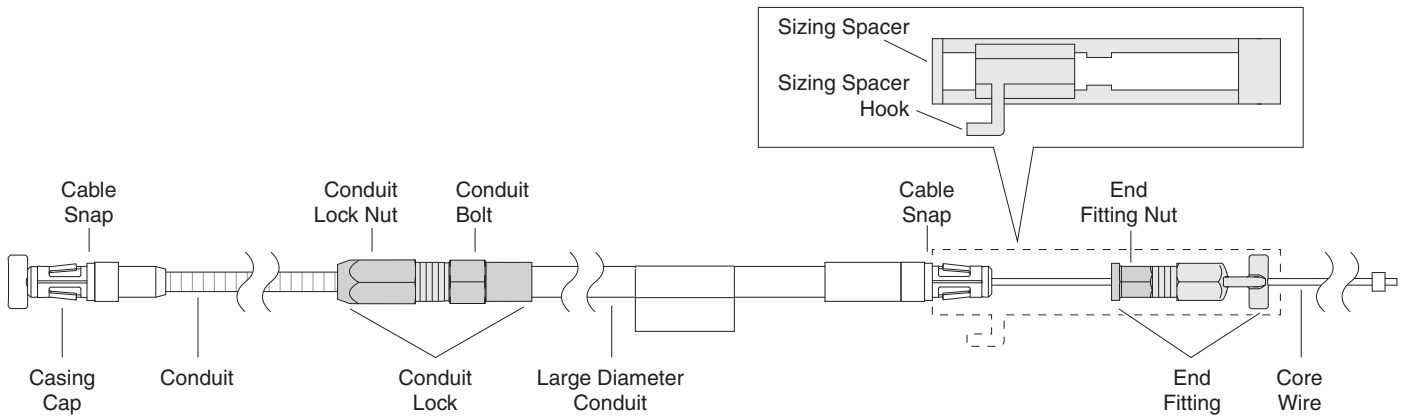
Standard Sizes



NOTE: For retrofit installations, begin at Step 19.



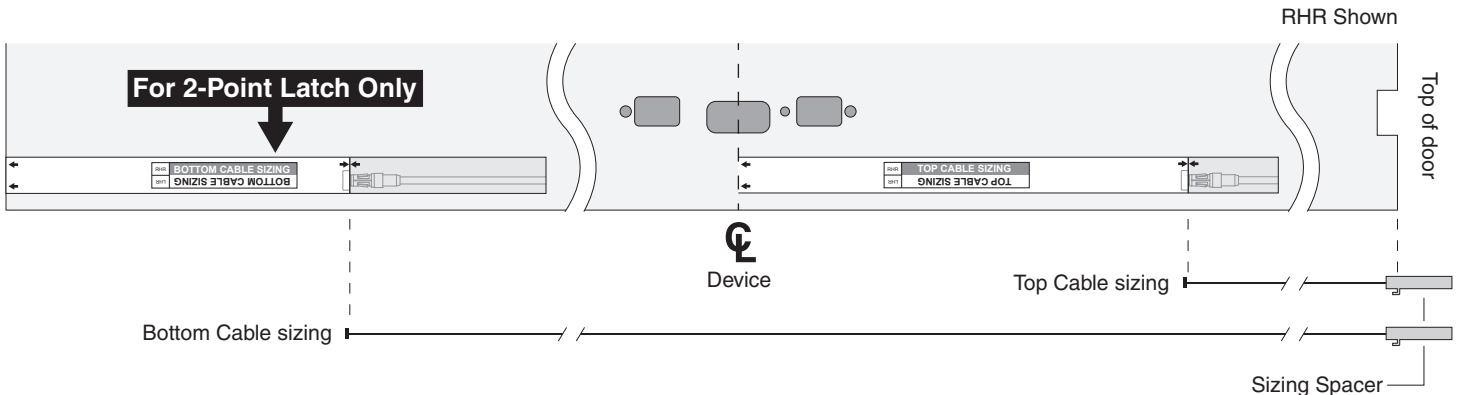
CABLE COMPONENTS



CABLE SIZING PREPARATION

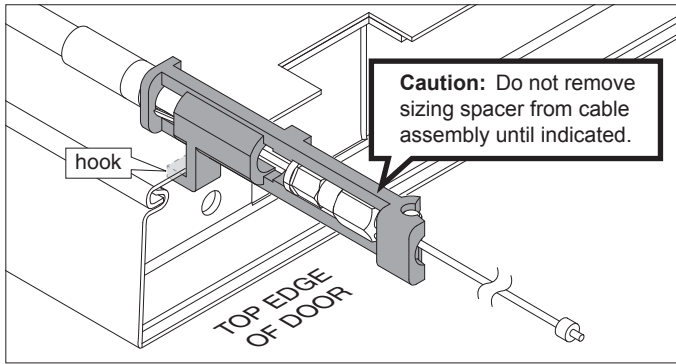
2 Align Sizing Tape to Horizontal Device Center Line as shown. For Bottom Cable Sizing (if applicable), Align Sizing Tape to Bottom Edge of Door.

Use cable components diagram above for reference.

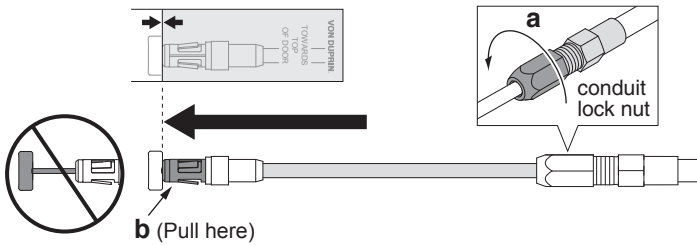


CABLE SIZING

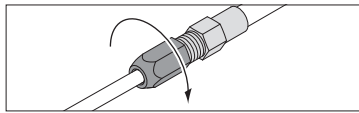
- 3** To Size Top Cable, Align Sizing Spacer Hook to Top Edge of Door.



- 4** Loosen Conduit Lock Nut 1/2 Turn. At Opposite End of Cable, Pull Casing Cap to Line on Tape.



- 5** Hand Tighten Conduit Lock Nut.

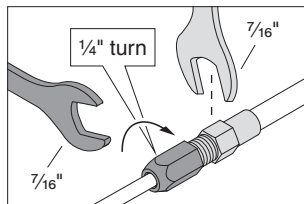


- 6** Wrench Tighten Conduit Lock Nut 1/4 Turn.

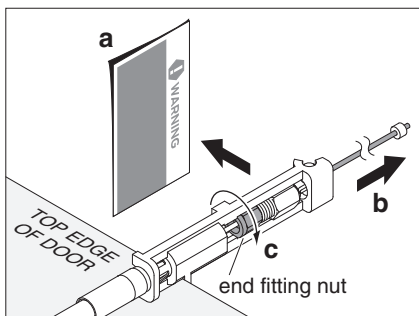
Caution: Do not overtighten.

WARNING

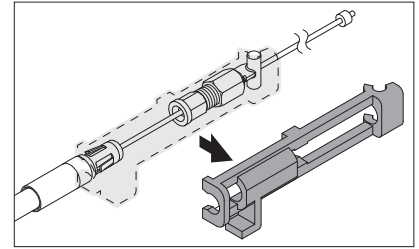
Failure to properly tighten conduit lock nut will result in device malfunction and possible lock in or lock out situation.



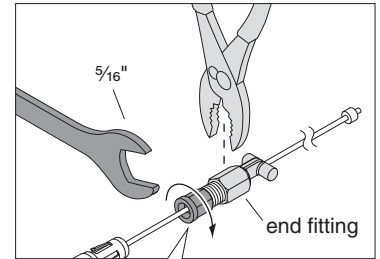
- 7** Remove Warning Label. While Pulling Core Wire Tight, Hand Tighten End Fitting Nut.



- 8** Remove Sizing Spacer. (Do not discard.)



- 9** While Holding End Fitting in Place with Pliers, Fully Tighten End Fitting Nut with Wrench.

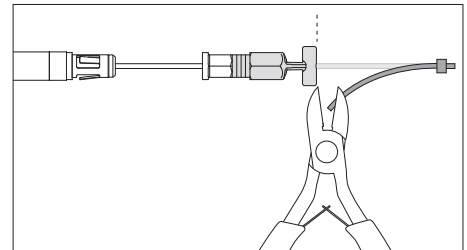


WARNING

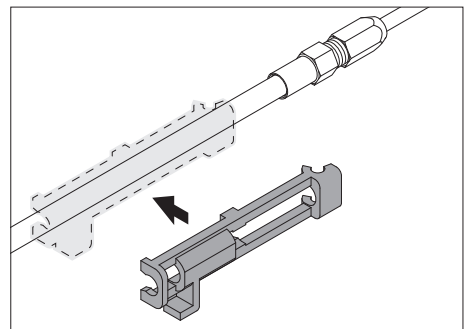
Failure to properly tighten end fitting nut will result in device malfunction and possible lock in or lock out situation.

Once tightened down, end fitting nut can't be loosened or readjusted.

- 10** Cut Core Wire Flush with End Fitting.



- 11** Snap Sizing Spacer onto Large Diameter Conduit for Storage.



- 12** To Size Bottom Cable, Align Sizing Spacer Hook to Top Edge of Door as before, and Repeat Steps 3 thru 10.

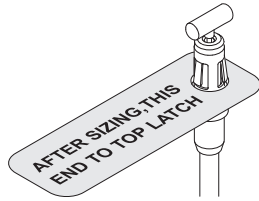
For 2-Point Latch Only

Repeat Steps 3 thru 10

CABLE INSTALLATION

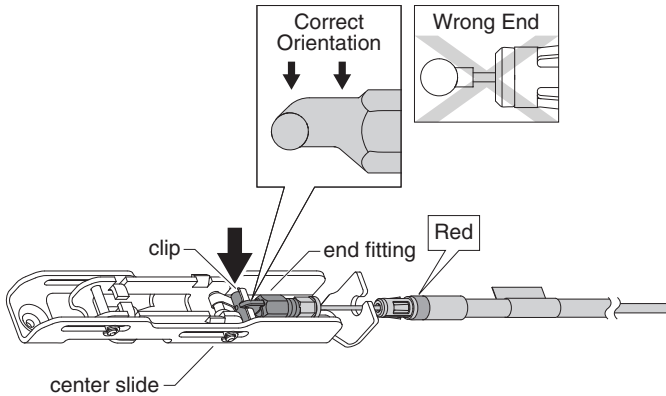
13 Flip Top Cable.

Caution: After sizing, TOP cable must be flipped 180° before installing. See tag.



14 Install Top Cable.

- a. There is an end fitting on one end of the red cable. Position this end to clip on center slide.

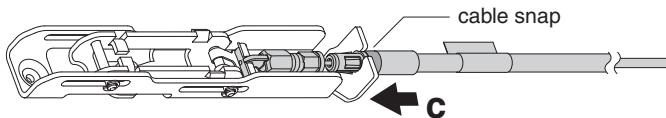


- b. Pull cable into clip to snap it into place.

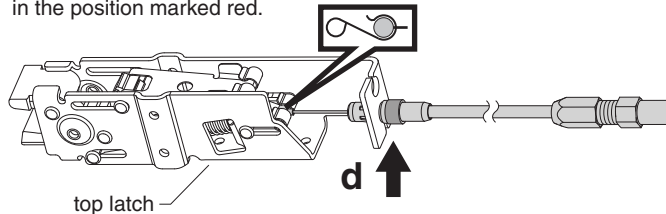
Caution: Ensure cable end is fully seated in clip.



- c. Push cable snap against center slide to secure cable.



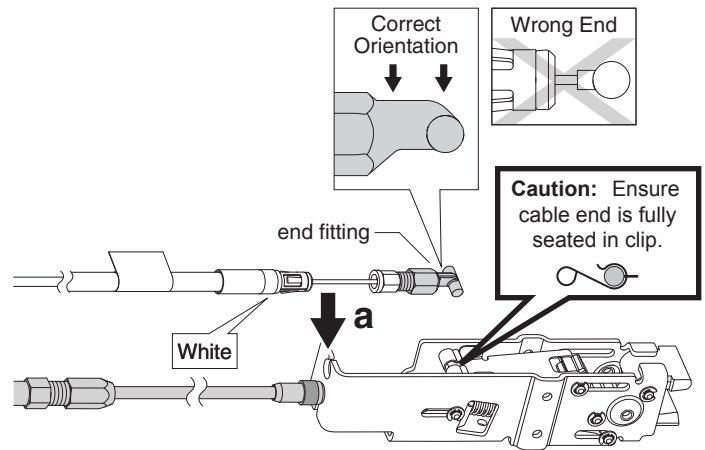
- d. Follow steps (a) thru (c) to install opposite end of red cable to top latch in the position marked red.



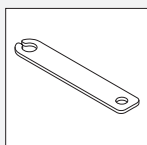
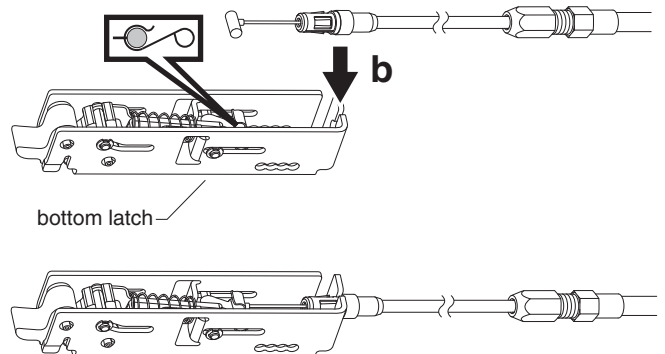
15 Install Bottom Cable.

For 2-Point Latch Only

- a. There is an end fitting on one end of the white cable. Install this end to the remaining top latch position (marked as white).



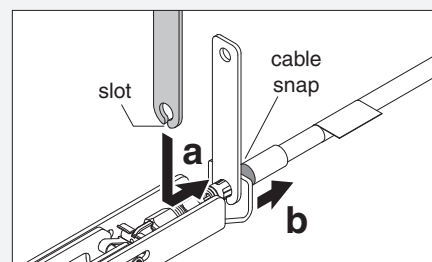
- b. Install opposite end of white cable to bottom latch.



Cable Removal

(If the cable was installed in wrong position)

A cable removal tool was included with device. Slot in tool fits over cable, holding tabs down. Pull on cable snap to loosen cable for removal.



16 Determine if Bottom Latch Retraction Adjustment is Necessary.

For 2-Point Latch Only

CAUTION

Critical step

CAUTION

Adjustment must be made while the top latch is in the hold-open position.

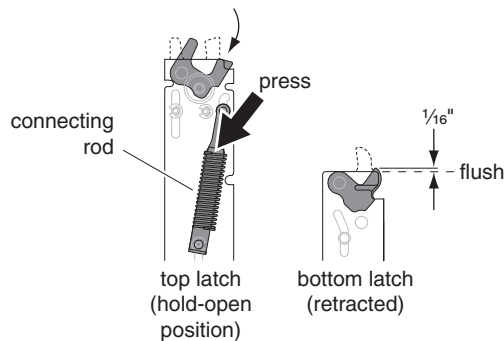


- Flex the cable into an L-shape as shown to simulate the installed condition of the latches.



- To determine whether an adjustment is required, actuate the top latch to the hold-open position by pressing down on the connecting rod. Bottom latch should retract to within $\frac{1}{16}$ " of flush. If it does not, an adjustment is necessary.

If no adjustment is needed, proceed to Step 18.



17 Adjust Bottom Latch Retraction (if necessary). For 2-Point Latch Only

The conduit lock is used to make this adjustment.

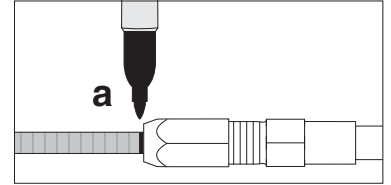


CAUTION

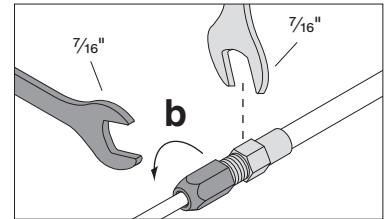
Adjustment must be made while the top latch is in the hold-open position.



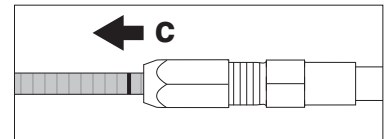
- Use a permanent marker or tape to mark position of bottom cable conduit.



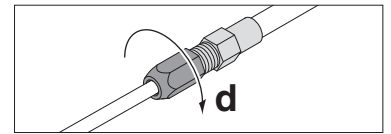
- Loosen conduit lock nut so conduit is free to slide.



- Pull until (1) extra wrap of conduit can be seen (1 wrap = $\frac{1}{8}$ ").



- Hand tighten conduit lock nut.



- Repeat Step 16. Confirm bottom latch now retracts to within $\frac{1}{16}$ " of flush.

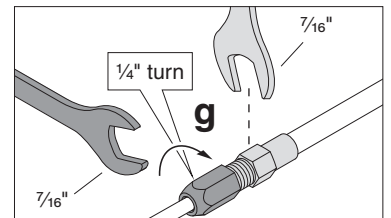
- If not, loosen conduit lock nut, pull out an additional wrap of conduit, and hand tighten conduit lock nut.

- Wrench tighten conduit lock nut $\frac{1}{4}$ turn.

Caution: Do not overtighten.

WARNING

Failure to properly tighten conduit lock nut will result in device malfunction and possible lock in or lock out situation.



18 Confirm Bottom Deadlatching. For 2-Point Latch Only

- Lock top latch. Flex the cable into an L-shape as before.

- Push against flat side of bottom latchbolt. Latchbolt should NOT release.



If latchbolt releases, return conduit to position marked in Step 17a. Repeat bottom latch retraction adjustment.

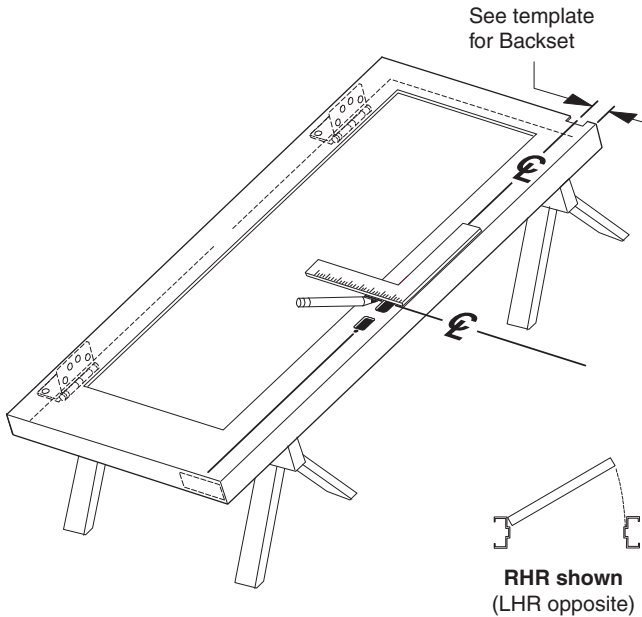
CAUTION

If no bottom latch retraction adjustment was necessary, yet the bottom latch won't deadlatch, contact technical support.

19 If Retrofit Installation

- Remove device from existing door.
- Remove and discard existing door.
- Remove and discard existing strikes.

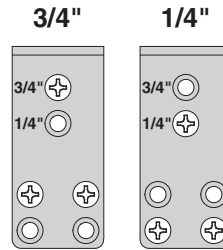
20 With Door Laying Flat, Draw Horizontal and Vertical Device Center Lines (C).



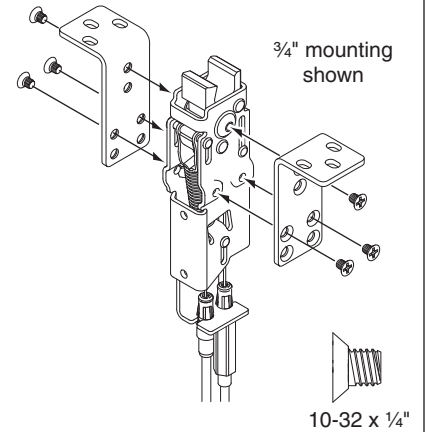
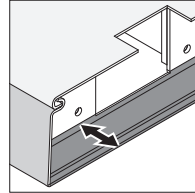
NOTE: Centerlines are predetermined by cutout. If no cutout exists, refer to templates at the back of this instruction to determine centerlines.

22 Assemble Latch Mounting Brackets. Hollow Metal Only

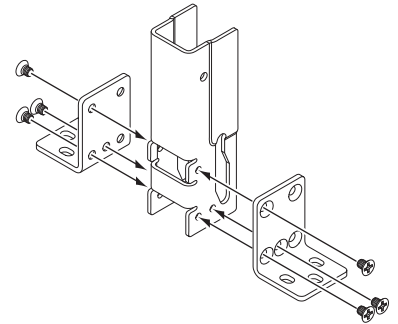
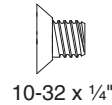
Top



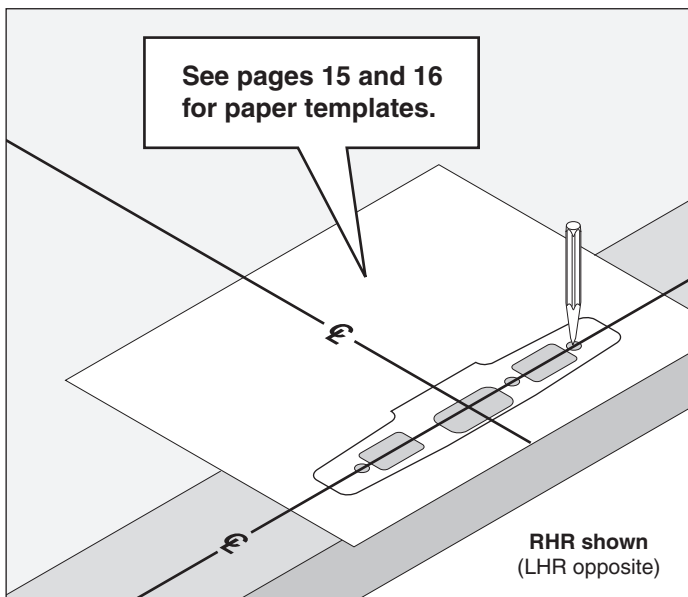
Depth from top edge of door to the channel



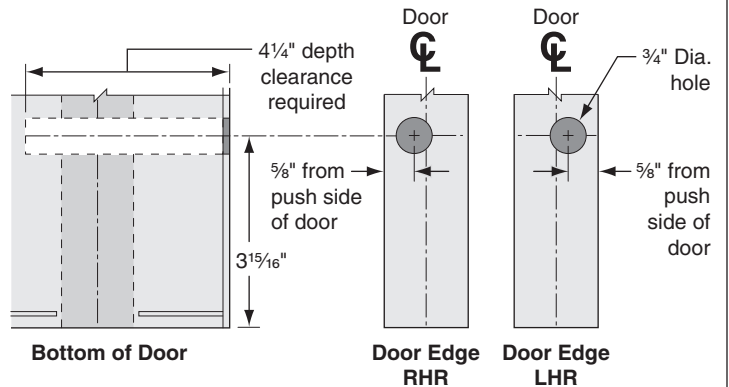
Bottom For 2-Point Latch Only



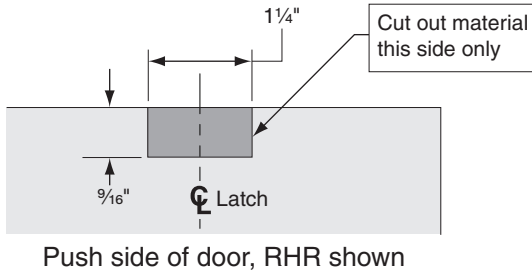
21 Align Paper Template to Mark and Prepare Door, if Required.



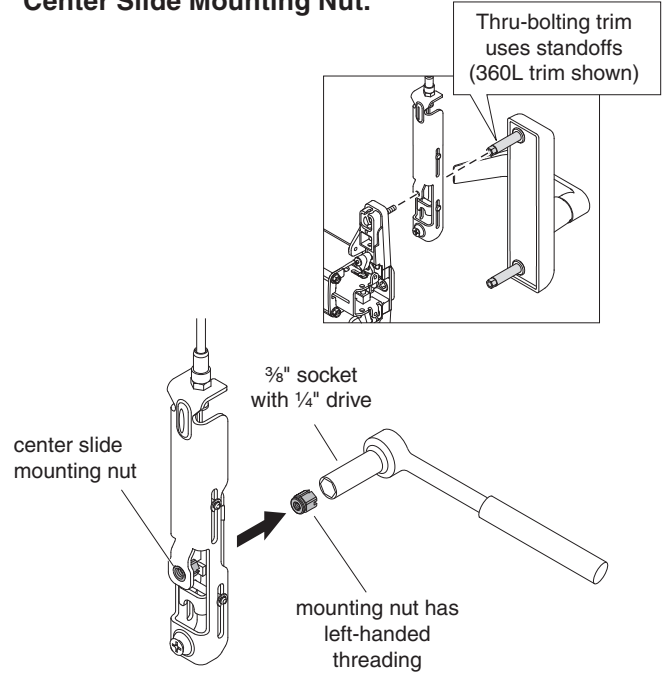
23 Prepare Access Hole for Bottom Latch Adjustment Pin. Hollow Metal For 2-Point Latch Only



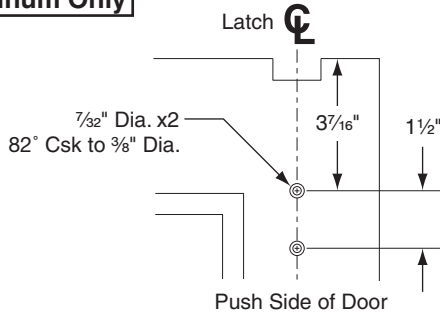
24 If Necessary, Prepare Door for Top Strike Cutout.



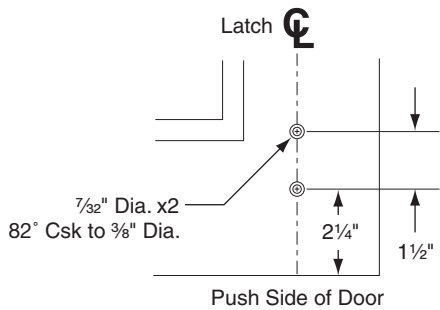
27 If Using 360/386/388 Thru-Bolting Trim, Remove Center Slide Mounting Nut.



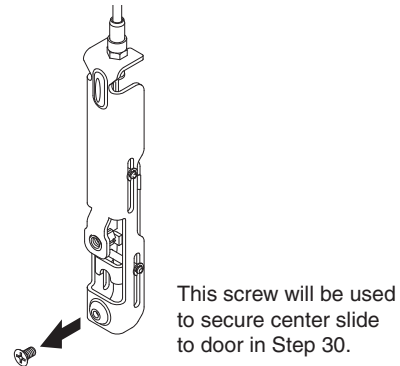
25 Prepare Top of Door for Latch Mounting.
Aluminum Only



26 Prepare Bottom of Door for Latch Mounting.
Aluminum For 2-Point Latch Only



28 Remove Screw from Center Slide.

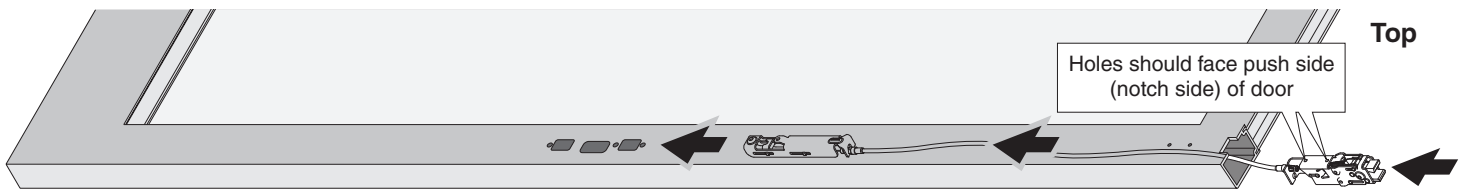


29 Slide Latch and Center Slide Assembly thru Door.

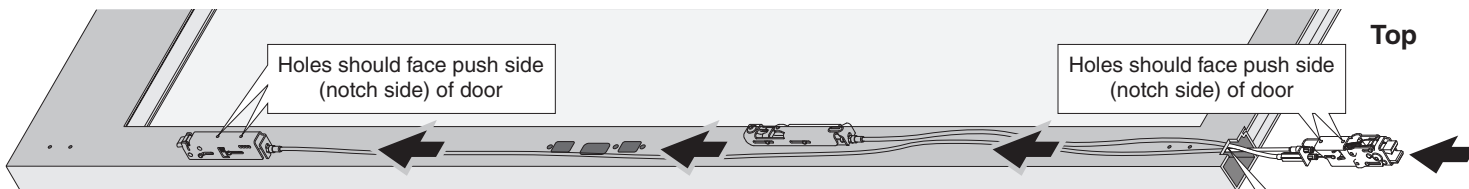
NOTE: Confirm top latch (and bottom latch, if applicable) is in correct orientation before proceeding.

NOTE: It is normal for the cable to bend inside the door, forcing the latch outward.

1-Point Latch (LBL)



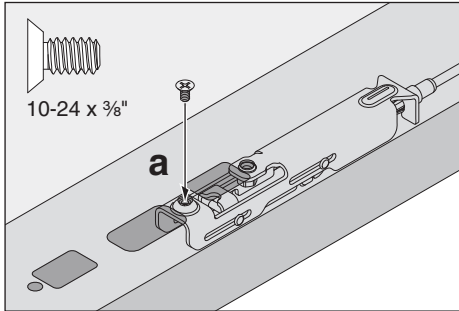
2-Point Latch



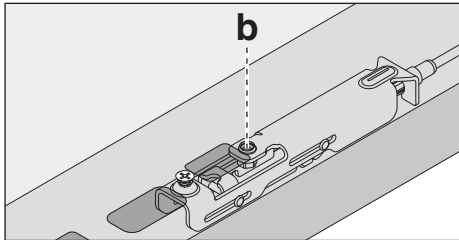
Aluminum Door application shown

30 Secure Center Slide to Door.

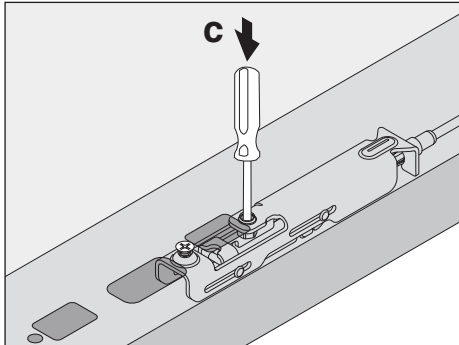
Secure center slide to door by lightly tightening lower screw.



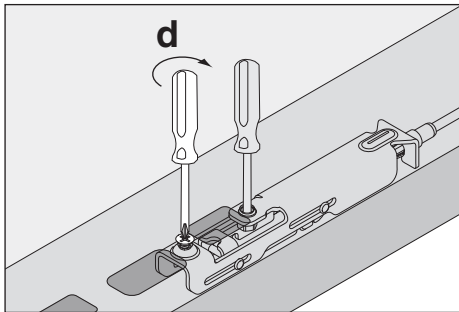
Align upper hole visually.



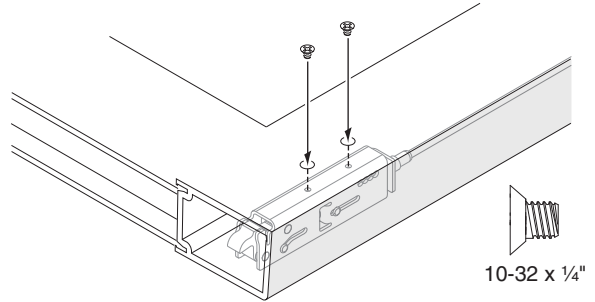
Insert small screwdriver into upper hole to prevent center slide from rotating.



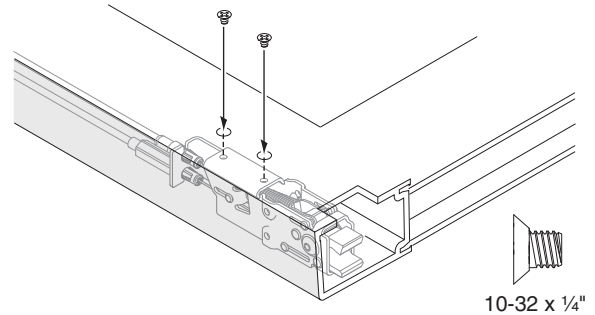
Fully tighten lower screw.



31 Align Bottom Latch and Install Mounting Screws. Aluminum For 2-Point Latch Only



32 Secure Top Latch with 2 Screws. Aluminum Only

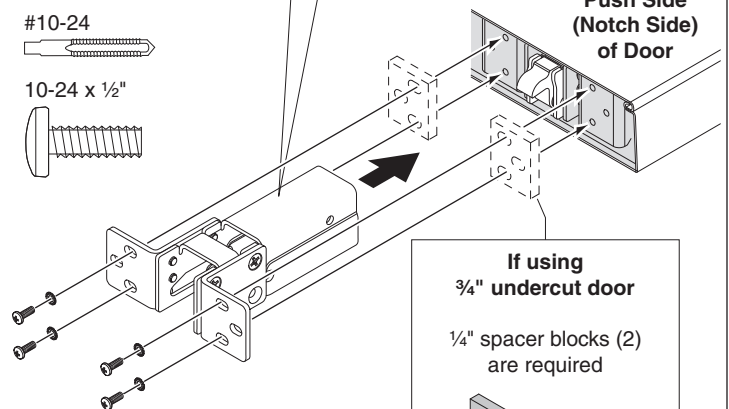


33 Install Bottom Latch Mounting Bracket Assembly. Hollow Metal For 2-Point Latch Only

NOTE: Confirm correct orientation of assembly before proceeding. Open side of housing should face pull side of door.

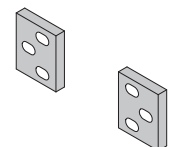
- #25
- #10-24
- 10-24 x 1/2"

Push Side
(Notch Side)
of Door



NOTE: Use 2 screws per bracket (center hole not used for this application).

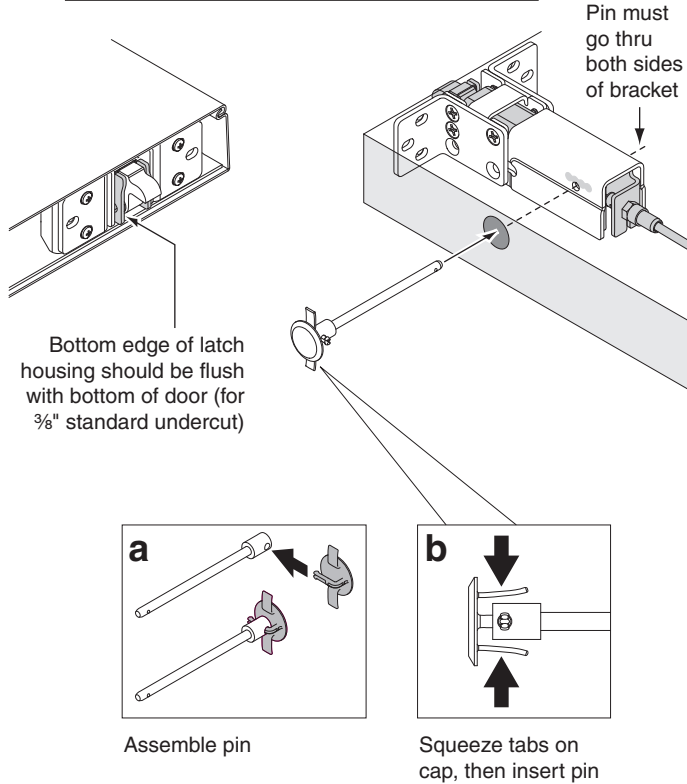
If using 3/4" undercut door
1/4" spacer blocks (2) are required



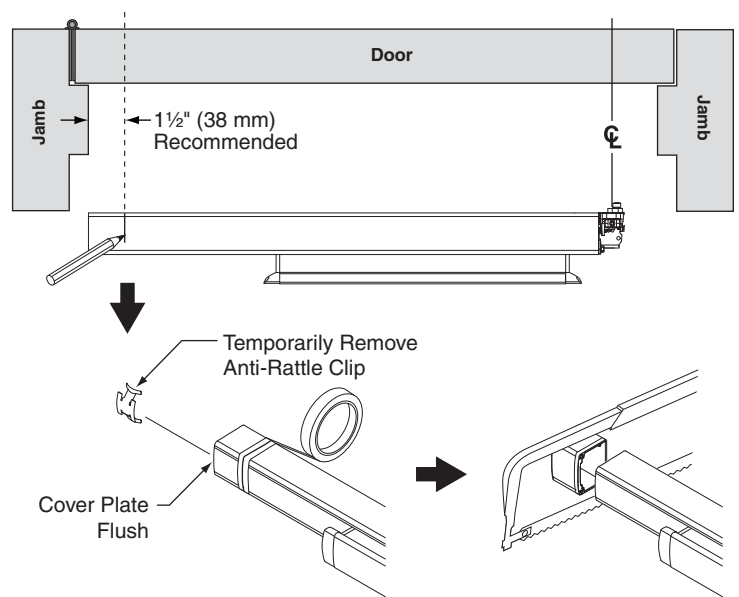
Spacer Block Kit
(24231516)
purchased separately

34 Insert Latch Adjustment Pin to Hold Bottom Latch in Place.

Hollow Metal For 2-Point Latch Only



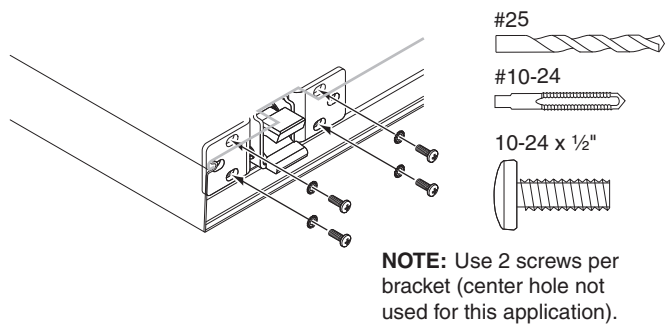
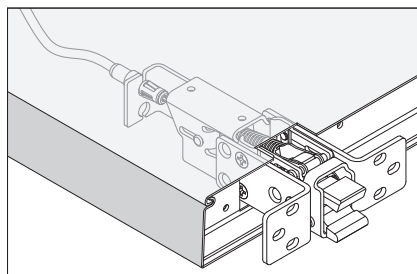
37 If Necessary, Cut Device.



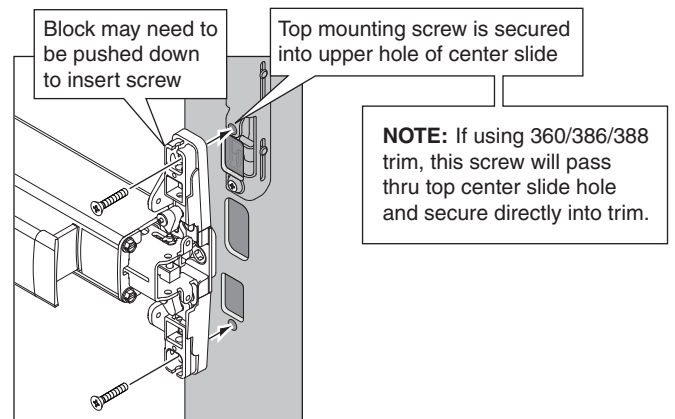
35 Secure Top Latch Mounting Bracket.

Hollow Metal Only

NOTE: It is normal for the cable to bend inside the door, forcing the latch outward as shown here.



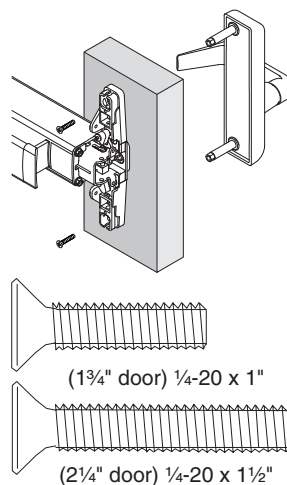
38 Attach Center Case to Door.



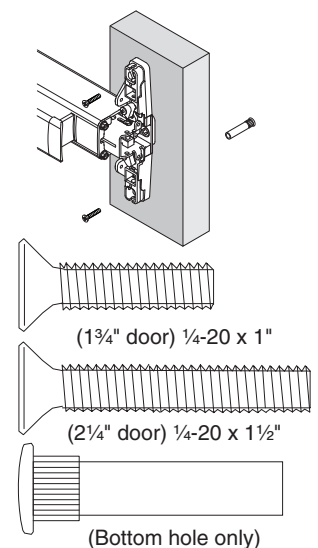
36 Hang Door on Frame.

Caution: For 2-point latches, bottom latch cannot be in locked position while hanging door on frame. Latch must be retracted.

Thru-bolting Trim

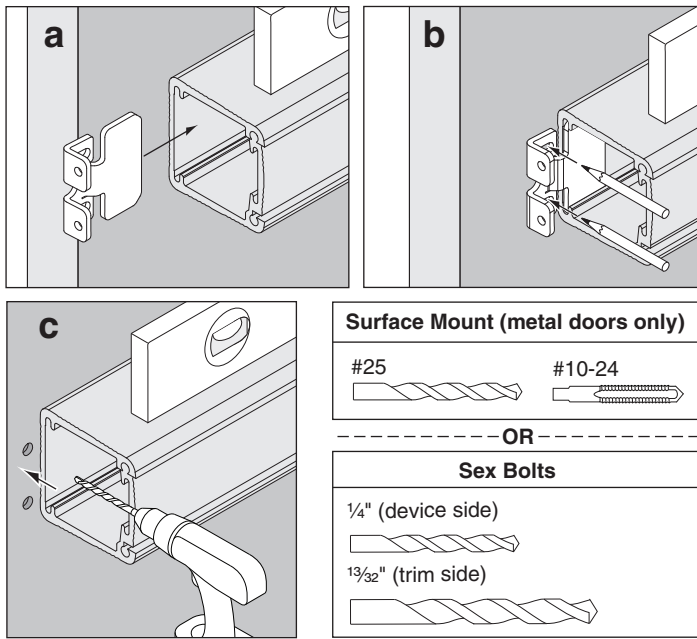


Sex Bolt

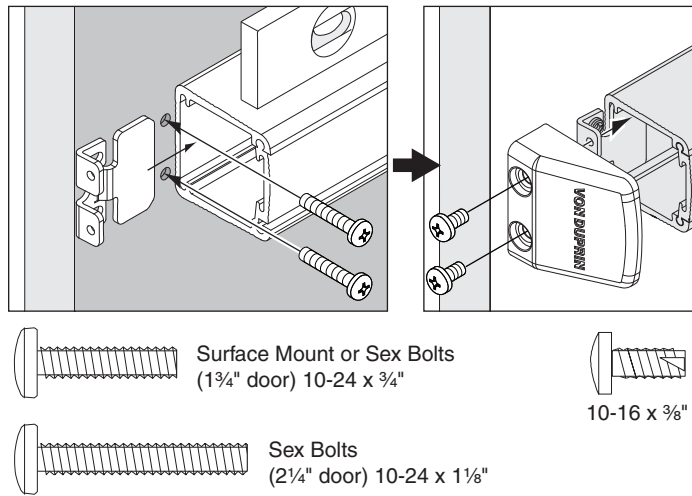


OR

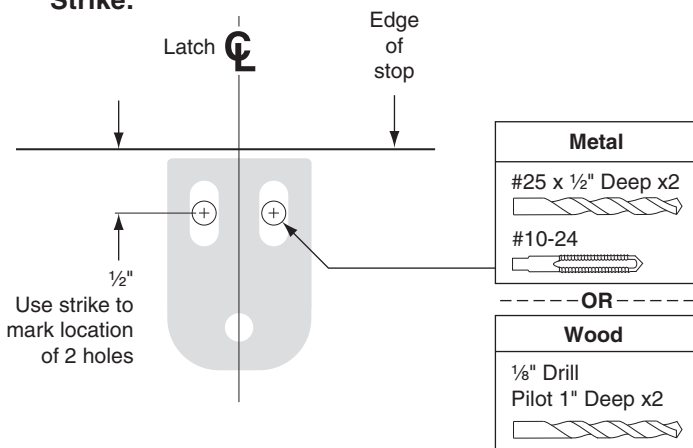
39 Mark and Prepare 2 Holes.



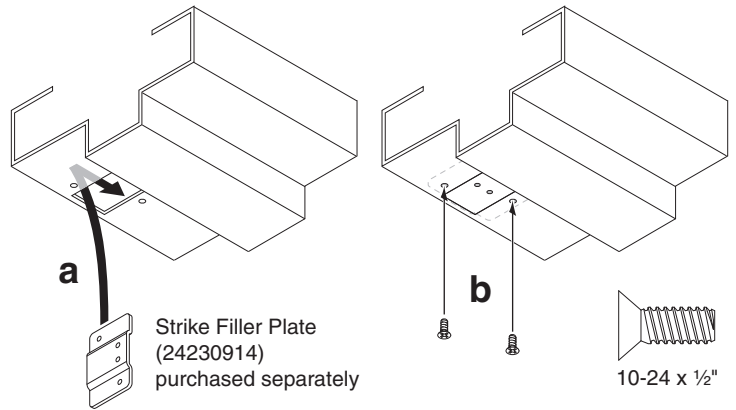
40 Install End Cap Bracket and End Cap.



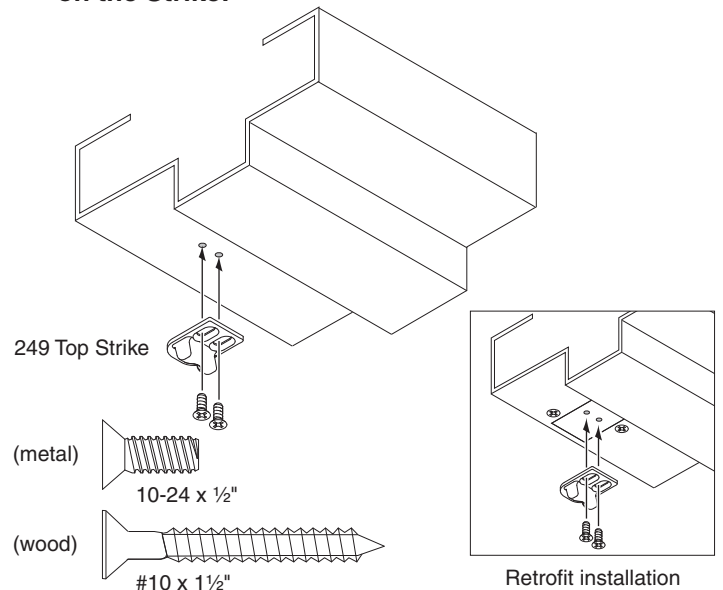
41 If New Installation, Prepare Door Frame for Top Strike.



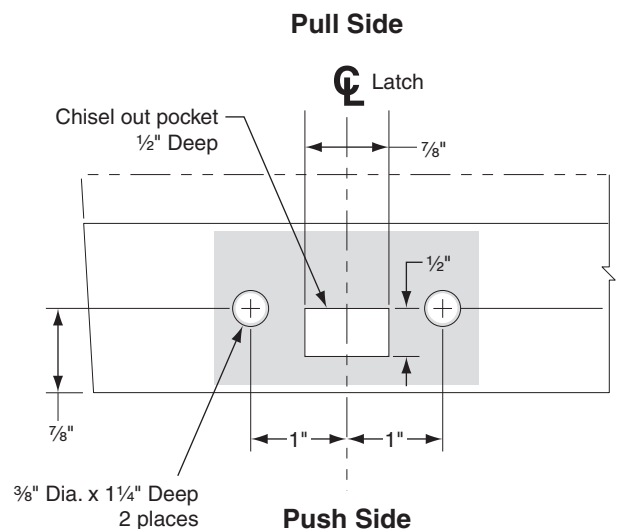
42 If Retrofit Installation, Install Steel Cover Plate to Cover Existing 338 Strike Opening in Accordance with the Frame Manufacturer's Fire Listing.



43 Install 2 Top Strike Screws Using the Slot Features on the Strike.



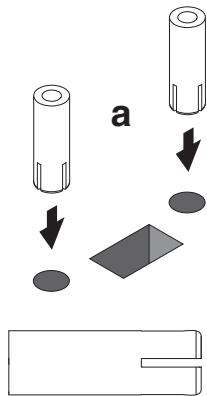
44 Prepare Floor for Bottom Strike. **Hollow Metal For 2-Point Latch Only**



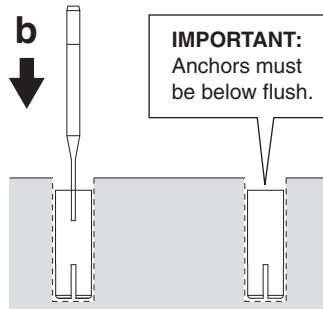
45 Install Bottom Strike.

Hollow Metal For 2-Point Latch Only

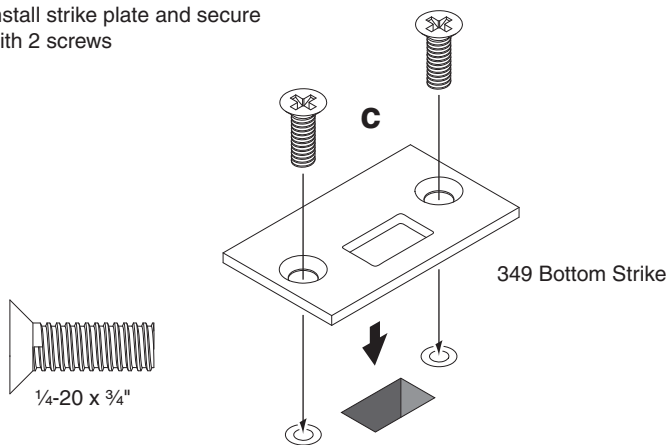
Clear holes of debris, then drop in anchors (slotted end first)



Secure the anchors using a hammer and punch



Install strike plate and secure with 2 screws



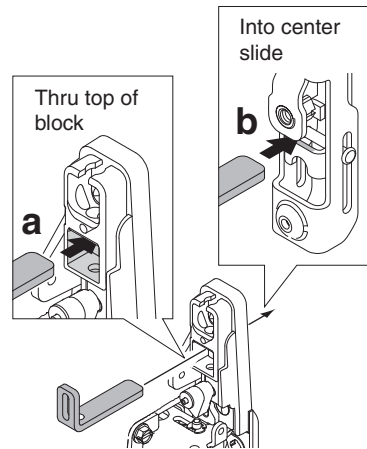
47 Install Lift Finger and Retainer Clip.

NOTE: Lift finger installation must be performed while the latches are in the extended (latched) position.

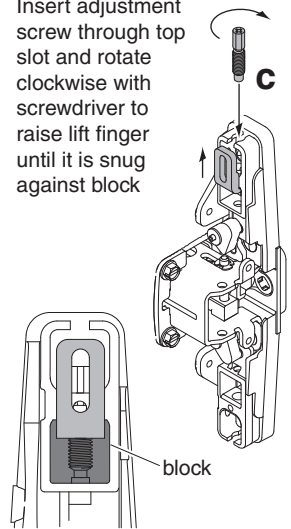
Slide L-shaped lift finger thru block in device center case and then into center slide

For 2-Point Latch Only

Push cable to the side so it does not interfere with lift finger.

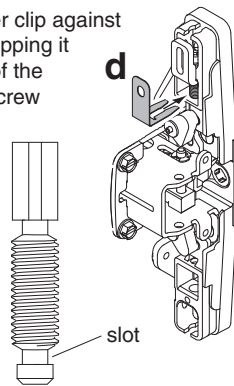


Insert adjustment screw through top slot and rotate clockwise with screwdriver to raise lift finger until it is snug against block



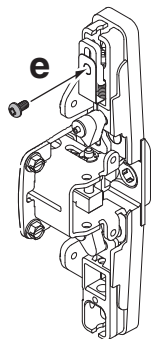
Install retainer clip against lift finger, snapping it into the slot of the adjustment screw

It may be necessary to back out adjustment screw a couple turns to see slot.



Secure lift finger and retainer clip with screw

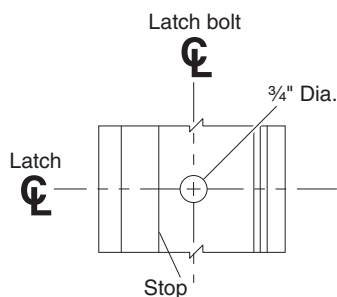
8-32 x 5/16"



46 Prepare Threshold.

Aluminum For 2-Point Latch Only

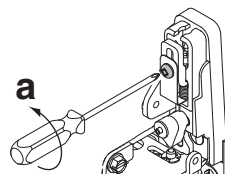
- After closing door with bottom latch installed, mark location where bottom latch bolt is contacting the threshold.
- Drill a 3/4" diameter hole in the threshold.



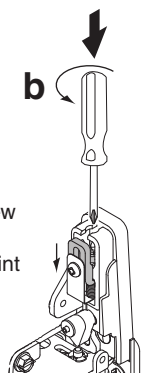
48 Adjust Lift Finger.

NOTE: Lift finger adjustment must be performed while the latches are in the extended (latched) position.

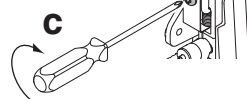
Loosen retainer clip screw



While maintaining downward pressure, turn adjustment screw counterclockwise to lower lift finger to point where top latch unlocks with push pad depressed halfway



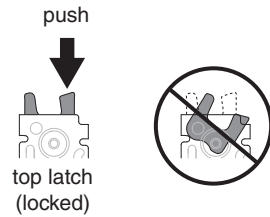
Tighten retainer clip screw



49 Confirm Top Deadlatching.

- Lock top latch.
- Push down on top latchbolt. Latchbolt should NOT release.

If latchbolt releases, loosen retainer clip screw, then rotate adjustment screw clockwise a couple turns to raise lift finger. Retighten retainer clip screw.



50 Perform Functional Test of Door.

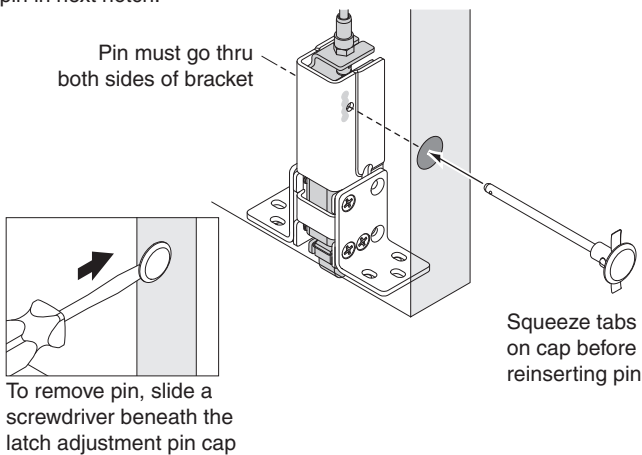
- Depress pushbar. Door should begin to open when pushbar is nearly fully depressed. If necessary, refer to Step 48 to readjust lift finger.
- With door closed, top latch should be secure.

For 2-Point Latch Only

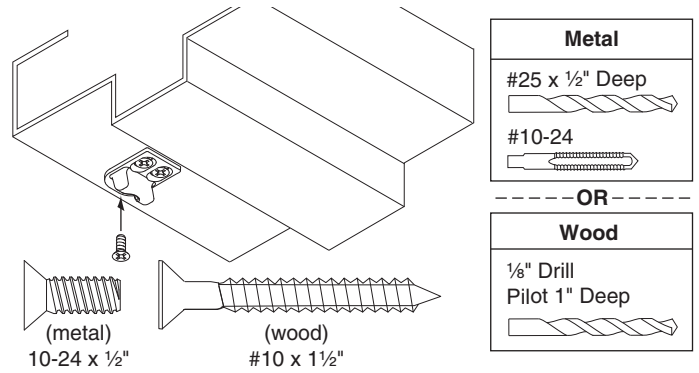
- With door closed, bottom latch should be secure.
- Confirm that bottom latch does not drag against floor when door is opened.

Hollow Metal For 2-Point Latch Only

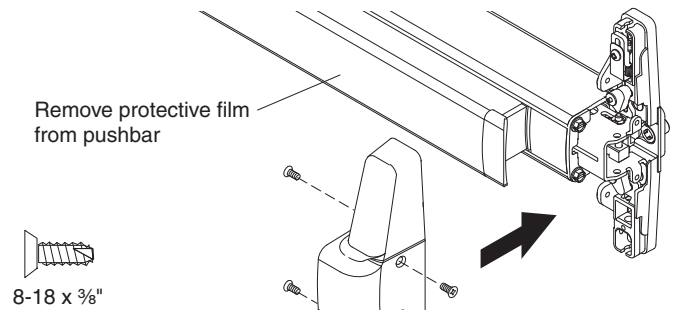
If this occurs, remove latch adjustment pin and raise latch, then reinsert pin in next notch.



51 Adjust Top Strike as Necessary, then Install the Third Strike Screw to Fix the Strike Position.



52 Install Center Case Cover.



OPTIONAL EQUIPMENT

CD (CYLINDER DOGGING)

1. Remove mortise cylinder cam and reinstall in reverse (Figure 1).
2. Insert key and rotate cam to install the cylinder to the cover plate (Figure 2).
3. Remove key to slide cover plate in position in the mechanism case.

CD function conversion

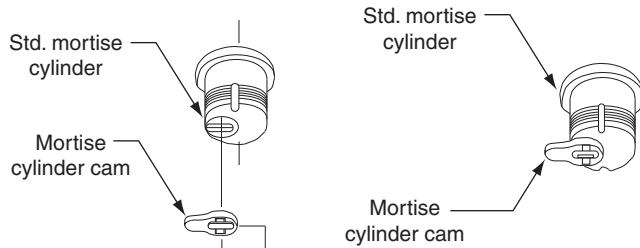


Figure 1

Dogging procedure

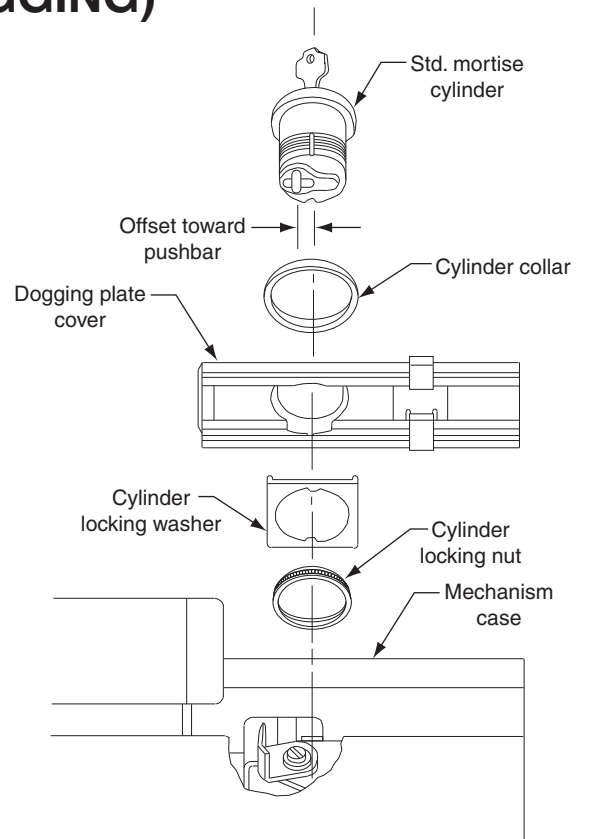
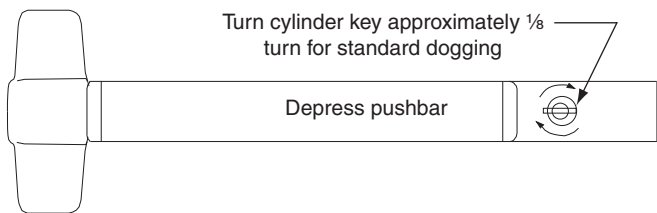


Figure 2

WARNINGS AND CAUTIONS

WARNING

Warnings indicate potentially hazardous conditions, which if not avoided or corrected, may cause death or serious injury.

CAUTION

Cautions indicate potentially hazardous conditions, which if not avoided or corrected, may cause minor or moderate injury. Cautions may also warn against unsafe practices.

Caution: Cautions indicate a condition that may cause equipment or property damage only.

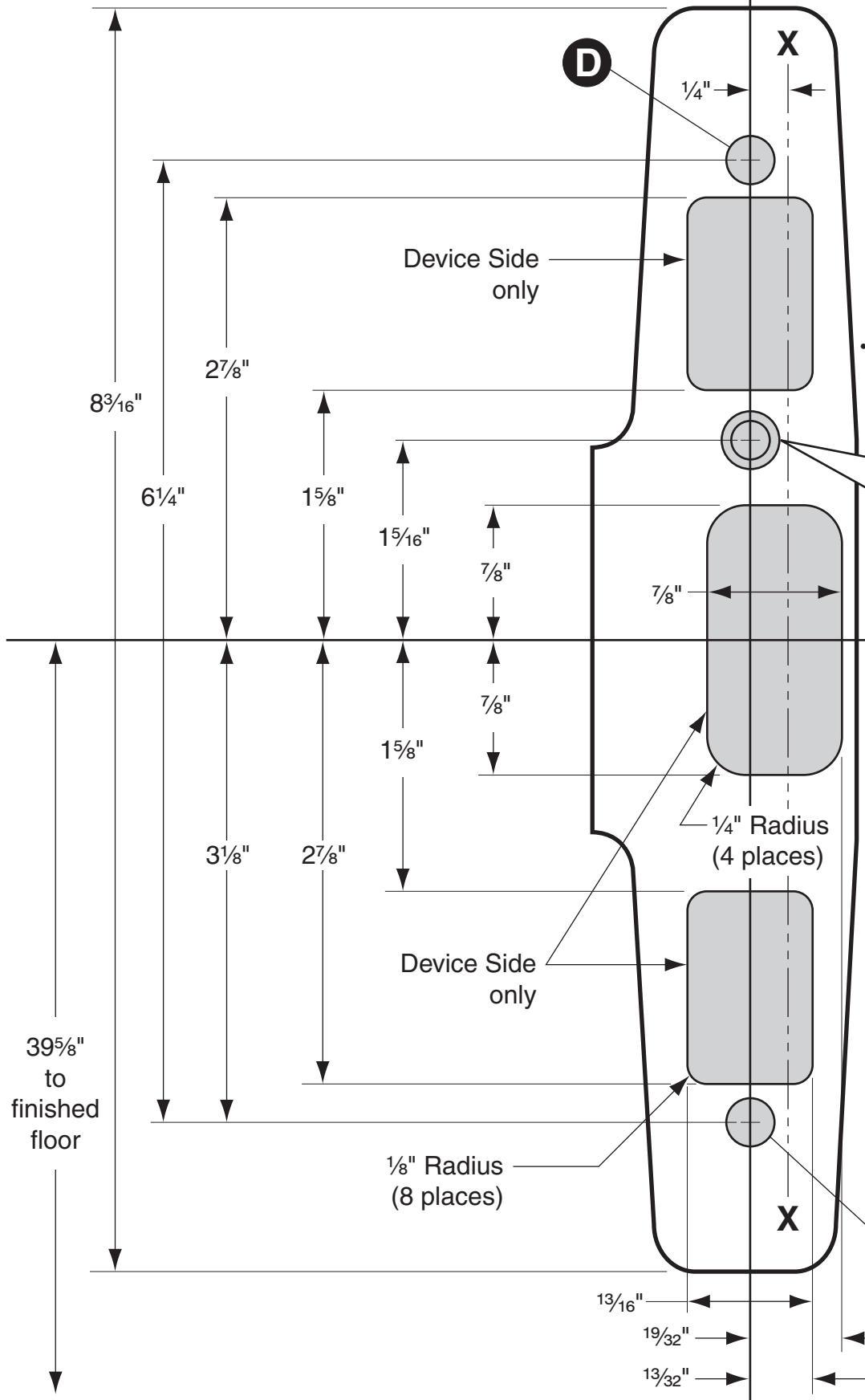
ALUMINUM AND HOLLOW METAL DOORS - RHR 33/3549A Device Template

☒ Device

RHR

B = backset

A = stile width



33/3549A		
Installation	A	B
pair of doors	2 1/8" to 2 3/4"	1 3/16"
	2 3/4" to 3 3/4"	1 1/2"
	3 3/4" to 5"	1 7/8"
single door	5" to flush	2 1/2"
	2 1/2" to 3 3/4"	1 1/2"
	3 3/4" to 5"	1 7/8"
5" to flush	2 1/2"	


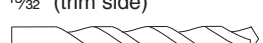

NOTE: Consult aluminum door manufacturer to confirm backset compatibility.


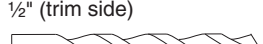
33/3549A-F	
A	B
3 5/8" Min.	2 3/4"

• Use of outside trim may alter minimum stile requirement. See trim template.

Aluminum Door
1/4" Dia. (Device Side only) 82° Csk to 7/16" Dia.
----- OR -----
Hollow Metal Door
1/4" Dia. (Device Side only) 82° Csk to 3/8" Dia.

☒ Device

Sex Bolt (for bottom hole only)	
C	5/16" (device side)  13/32" (trim side) 
D	5/16" (device side)  (Screw will tighten directly into center slide)

Thru-Bolting Trim	
C	5/16" (device side) 
D	1/2" (trim side) 

LHR

Device \mathcal{C}

ALUMINUM AND HOLLOW METAL DOORS - LHR

33/3549A Device Template

B = backset

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33/3549A		
Installation	A	B
pair of doors	2 1/8" to 2 3/4"	1 3/16"
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	3 3/4" to 5"	1 7/8"
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	2 1/2" to 3 3/4"	1 1/2"
	3 3/4" to 5"	1 7/8"
NOTE: Consult aluminum door manufacturer to confirm backset compatibility.		

33/3549A-F	
A	B
3 5/8" Min.	2 3/4"

- Use of outside trim may alter minimum stile requirement. See trim template.

Aluminum Door	
1/4" Dia. (Device Side only)	82° Csk to 7/16" Dia.
----- OR -----	
Hollow Metal Door	
1/4" Dia. (Device Side only)	82° Csk to 3/8" Dia.

\mathcal{C} Device

Sex Bolt (for bottom hole only)	
C	5/16" (device side)
	1 3/32" (trim side)
D	5/16" (device side)
	(Screw will tighten directly into center slide)
----- OR -----	

Thru-Bolting Trim	
C	5/16" (device side)
D	1/2" (trim side)

